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First Named Inventor	John C. Parsons
Art Unit	1794
Examiner Name	P. Choi
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  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	FERRELLS, PLLC		
Signature	Michael W. Ferrell		
Printed name	Michael W. Ferrell		
Date	October 20, 2008	Reg. No.	31,158

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	:	
John C. Parsons et al.	:	Examiner: P. Choi
U.S. Serial No. 09/883,520	:	Group Art Unit: 1794
Filed June 18, 2001	:	
Docket No. 1931.VIN (EM-05-2)	:	
For: WATER DISPERSIBLE, SALT SENSITIVE NONWOVEN MATERIALS	:	

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REPLY BRIEF

Sir:

This is in reply to the *Examiner's Answer* mailed August 18, 2008.

REPLY

In the *Examiner's Answer* dated August 18, 2008, the rejections were maintained under 35 USC § 102/103 over the following references (and various combinations thereof): United States Patent No. 5,521,266 to *Lau*; United States Patent No. 5,631,317 to *Komatsu et al.*; with or without United States Patent No. 5,976,694 to *Tsai et al.* These rejections are untenable for the reasons set forth in Appellant' main brief.

The invention of this case is directed, in part, to salt-sensitive binder latexes...

> ...wherein said latex polymer composition forms films that are ***dispersible rather than soluble in tap water in that a film formed from the polymer breaks into small discrete particles that can be filtered out***, and non-dispersible in aqueous solutions containing 0.5 weight percent or more of an inorganic salt. [emphasis added]

The results seen with the invention are unexpected as is seen in the *Declaration Under 37 CFR § 1.132* of John C. Parsons, dated September 12, 2005; *note* particularly paragraph 6:

> It is unexpected based on his experience, and based on *Cole et al.* that emulsion binders including polymers which are not fully *water-soluble* can form emulsion residue binders which readily *disperse in water* but that the *dispersibilty is salt-sensitive* as is claimed in the above referenced application. This is a superior result because of the enhanced processability of emulsion binders and their shipping and handling advantages noted above. The result is unexpected because the non-water soluble polymers of the present invention have much lower water solubility than the acrylic acid, highly water soluble polymers disclosed by *Cole et al*, for example; yet the binders are nevertheless dispersible in tap water and non-dispersible in salt solution. One of skill in the art would not expect this result; especially because of the fact the polymers are not water soluble.

Moreover, the binder system used in connection with the invention are easier to prepare than solution polymers; again a superior result. *Note* paragraphs 8, 9 of the *March 2007 Declaration*:

> 8. Additionally, the emulsion polymers produced according to the invention have a significantly different structure than solution polymers, even after the polymer composition coalesces into a film on a nonwoven web. Without being bound by a theory, it is believed the emulsion polymers form films by coalescence of discrete polymer particles which are separated by the stabilizing agent; this results in relatively weak bonds. Weaker bonds are advantageous in

applications where water dispersibility is required. With solution polymerized resins, the polymer chains mix and entangle during film formation. The weak bonds formed by the emulsion polymer are fundamental to its dispersibility in tap water. For example, unlike the prior art, large amounts of extremely hydrophilic monomers such as acrylic acid are not needed to provide a water-dispersible composition. Less hydrophilic monomers such as methacrylic acid may be used which generally accommodates emulsion polymerization techniques better. Accordingly, in his technical opinion the compositions described in the '317 *Komatsu* reference are not remotely suggestive of the latex polymer binder used in the non-woven material of the invention.

9. The use of emulsion polymerized resins (referred to simply as "emulsion polymers," or the like, in the pending application) has significant advantages over solution polymerized resins. For example, emulsion polymerized resins exhibit a much lower viscosity for a given solids content. Example 1 of *Komatsu* reports a solids content of 17.9 % and a viscosity of 500 cps, whereas the colloid stabilized emulsion resin of Example 11 in the '129 *Eknoian* patent has a solids content of 29.7 % and only has a viscosity of 136 cps. Moreover, because the viscosities are so low, the emulsion product can be prepared and shipped at an extremely high solids content, which is advantageous from an economic perspective. Additionally, because the emulsion polymerization occurs in the dispersed phase of an aqueous medium, no solvent is required to dissolve the components. This is highly preferred, because there is no need to evaporate off excess organic solvents which are detrimental to the environment.

In item 10, the Response to Argument section of the *Answer*, beginning on page 19, the Examiner attempts to defend the rejections; based on various theories of inherency. Inherency is not relevant for purposes of obviousness. In this regard, the arguments presented as to obviousness based on "inherency" are without any merit whatsoever. Furthermore, the Examiner concedes that the references do not teach the invention. See, for example, the statement on page 4 of the *Answer,* first full paragraph:

> ...Lau does not appear to teach that the latex polymer composition forms films that are dispersible rather than soluble in tap water in that a film formed from the polymer breaks into small discrete particles that can be filtered out, and non-dispersible in aqueous solutions containing 0.5 weight percent or more of an inorganic salt....

As to the § 102 anticipation rejections and "inherency", the Examiner has ignored the overwhelming rebuttal evidence of record, the *Declaration* evidence which squarely addresses the various contentions of the Examiner.

Note the *Declaration Under 37 CFR § 1.132* of Steven J. Pauls dated July, 23, 2007, paragraph 5, concerning the *Lau* reference:

> 5. That United States Patent No. 5,521,266 does not contain a description of an emulsion polymerized polymer which is dispersible in water such that a film breaks into small pieces and can be filtered out. Examples 1-3 of the '266 patent involve ***solution polymers which dissolve in water and accordingly cannot be dispersible as defined above.*** Examples 4 and 5 of the '266 patent involve emulsion polymers having the composition of Table 4.2, Col. 15 of the '266 patent...*Note* that the polymers are mostly alkylated organic esters and contain only 0, 1 or 2% methacrylic acid. ***Based on his experience, it is clear to him that these emulsion polymers are not dispersible in water, nor would their dispersibility change in response to salt concentration.*** Accordingly, the products of the Present Invention are not suggested by the reference in any way.

Note that same *Declaration,* paragraph 6 concerning the *Komatsu et al.* reference:

> 6. As opposed to emulsion polymerization techniques, the '317 *Komatsu* reference discloses solution polymerized polymers. Solution polymerization techniques are fundamentally different from emulsion polymerization, and generally involve dissolving the monomer components in an organic solvent and initiating the polymerization, where the reaction components and polymer product are dissolved in the organic solution. In solution polymerization processes, there is typically only one phase. It is readily apparent that the polymers described in the '317 *Komatsu* patent are not "dispersible" in the sense defined above. That is, that a film can be broken into small pieces and filtered out. Rather, the polymers described simply dissolve in water. He has reviewed the '317 *Komatsu* patent carefully and it is clear to him that the binder resins described in the patent are water soluble. The abstract of the patent, for example, states that the polymers are water soluble in tap water, such that they could not be filtered out:

Disclosed is a process for producing a self-dispersing and salt-sensitive polymer by polymerizing the following monomers (A), (B) and (C) in a total concentration of 25 % by weight or above:

(A) 35 to 65 % by weight of acrylic acid,

(B) 10 to 45 % by weight of a vinyl monomer represented by the following general formula [I]:

$$CH_2=C(R^1)COOR^2 \quad [I]$$

wherein R^1 represents a hydrogen atom or a methyl group; and R^2 represents an alkyl group having 8 to 12 carbon atoms, and

(C) 20 to 45% by weight of a vinyl monomer represented by the following general formula [II]:

$$CH_2=C(R^3)COOR^4 \quad [II]$$

wherein R^3 represents a hydrogen atom or a methyl group; and R^4 represents an alkyl group having 2 to 4 carbon atoms in a mixed solvent comprising 50 to 90% by weight of an organic solvent having a solubility parameter of 10 $(cal/cm^3)^{1/2}$ or below and miscible with water and 50 to 10% by weight of water, neutralizing 2 to 15 molar % of the acrylic acid moiety of the polymer, distilling off the organic solvent while water is left, and further adding water thereto. The polymer produced by the process is soluble in tap water, but insoluble in an aqueous salt solution of a low concentration such as 0.2% aqueous salt solution. In case the polymer is used as a binder for a non-woven fabric or paper, it exhibits satisfactory strength and permeability to a body fluid when the resultant product is wet with the body fluid.

See also the *March 2007 Declaration* at paragraphs 6-7:

6. In contrast to the above noted emulsion polymerization techniques, the primary reference cited by the Examiner, '317 *Komatsu*, discloses solution polymerized polymers. Solution polymerization techniques are fundamentally different from emulsion polymerization, and generally involve dissolving the monomer components in an organic solvent and initiating the polymerization, where the reaction components and polymer product are dissolved in the organic solution. In solution polymerization processes, there is typically only one phase.

7. Specifically, the '317 *Komatsu* reference discloses salt-sensitive polymers that are polymerized by dissolving the monomers in a miscible acetone/water

> mixture, where after polymerization, the solvent is evaporated off such that the polymer is dispersed in the water component. Although the *Komatsu* patent refers to the polymer that is dispersed in water as an "emulsion" it is clear that the polymer is not emulsion polymerized, nor does it contain a colloid component or other stabilizers, both features that are embodied in the subject matter of the pending claims. The compositions in *Komatsu* are therefore not "emulsions" within the meaning of the pending application.

Contrary to the Examiner's arguments, the aforementioned *Declaration* evidence is not *mere opinion* directed to legal conclusions, there are numerous statements of fact as to what the references disclose based upon Mr. Pauls' quarter of a century of experience in the field. He is one skilled in the art, and one able to determine whether or not a reference discloses "inherently" what the Examiner has mistakenly speculated to be the case. Statements of fact by an expert must be given due weight. *In re Alton*, 37 USPQ2d 1578, 1583 (Fed. Cir. 1996) is particularly *apropos*:

> Additionally, the examiner interpreted the Wall declaration as offering opinion evidence, rather than factual evidence, on the adequate written description issue. The Wall declaration's assertion that "[m]odifying the residue at position 81 would have no effect on [disulfide bridge formation] because neither [asparagine] nor lysine can participate in disulfide bridge formation" is a factual statement, however. So too is the statement that changing the amino acid at position 81 would involve a modification in subunit IF-2, "requiring an entirely separate series of manipulations of the complete [amino acid] sequence to generate this different class of analog." We do not read the declaration as asserting an opinion on the patentability of the claimed IFN-_ analog. ***Rather, the declaration is offering factual evidence in an attempt to explain <u>why</u> one of ordinary skill in the art would have understood the specification to describe the modification involving the deletion of the first three amino acids independently of the modification at position 81. Dr. Wall's use of the words "it is my opinion" to preface what someone of ordinary skill in the art would have known does not transform the factual statements contained in the declaration into opinion testimony***. Consequently, the examiner's dismissal of the declaration on the grounds that "[l]ittle weight is given an opinion affidavit on the ultimate legal question at issue" was error.

See also MPEP 716.02(g) which explicitly states that:

> The reason for requiring evidence in declaration or affidavit form is to obtain the assurances that ***any statements or representations made are correct***, as provided by 35 U.S.C. 25 and 18 U.S.C. 1001.

The Examiner is disputing the sworn statements of Mr. Pauls without basis. Those statements are based upon his many years of experience in the field and are entitled to due weight; failure to do so requires reversal.

The legal standards applied by the Examiner also warrant reversal. Anticipation is cannot be based on speculation that a certain claim limitation may be met; the subject matter must ***necessarily*** occur. MPEP §2112, part (IV), specifically prohibits making speculative rejections and labeling them "inherent" as the Examiner has done:

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the ***inherency*** of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because ***inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art***); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "***To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'*** " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently). (emphasis provided)

Finally, the Examiner has improperly failed to consider the language in the claims reciting salt-sensitive dispersibility as opposed to solubility. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). A rejection is only proper if ***each and every element*** as specifically claimed in the application (*see* MPEP § 2143.03 reproduced in part below):

> All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

In other words, ***all*** of the claim limitations need to be considered, including the functional features of the products. Note *In re Goffe*:

> [W]e cannot agree with the board's determination that the claims are inclusive of materials which would not apparently be operative in the claimed process. *** Having stated the objective *** together with the process steps, use of materials which might prevent achievement of the objective *** can hardly be said to be within the scope of the claims.

Id. At 431 (citing *In re Geerdes*, 180 USPQ 789, 793 (CCPA 1974).

For all of the above reasons, and for the reasons stated in Applicant's main Brief, the outstanding rejections should be reversed and this case passed to issue.

Respectfully submitted,

Michael W. Ferrell
Reg. No. 31,158

Ferrells, PLLC
4400 Fair Lakes Court, Suite 201
Fairfax, VA 22033-3899
Telephone: (703) 968-8600
Facsimile: (703) 968-5500
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